

ALTERNATIVE ROUTES DISCUSSION

Review of the route alternatives proposed by the NYSDOS and the Villages showed that there were a total of 15 different routes comprised of 23 separate segments in Rockland and Westchester counties. Following is a discussion of each of these alternative routes. Attachment 2 contains Table 1 – Alternative Routes, which identifies the segment designations that comprise each route. Attachment 3 is a schematic that visually depicts the routes, including their overlapping and at times redundant nature. Attachment 4 is a USGS topographic map showing the actual physical location of the routes and their component segments. Attachment 5 contains Table 2 – Segment Observations and Analysis that summarizes the results of our field and constructability observations. Attachment 6 is a collection of photographs from each of the segments to help the reader comprehend the nature of the key problems encountered.

Route 1

Route 1 (approximately 17.6 miles) follows the Palisades Interstate Parkway (PIP) southerly to the Tennessee pipeline ROW just north of the New York/New Jersey border. It then follows Tennessee's ROW easterly through Tallman Mountain State Park, Piermont Marsh and across the Hudson River to the Village of Dobbs Ferry. It continues to follow the Tennessee Gas ROW easterly through several residential areas and a private country club, as well as a school and church parking lot. It reconnects with the FERC certificated route on the South County Trail near the Saw Mill Parkway. Route 1 is not feasible from a design, construction, operation and maintenance perspective in numerous locations, primarily due to an inadequate staging area for the Hudson River crossing at Piermont Marsh and the lack of any usable workspace along Wickers Creek, The Landing and Legend Hollow in the Village of Dobbs Ferry.

This route is located within the PIP ROW for approximately 12.6 miles. The PIP is a National Historic Landmark and thus is afforded special status and protection under the National Historic Preservation Act. The centerline of the required pipeline trench would be approximately 25-feet inside the eastern edge of the PIP ROW. The pipeline facilities could not be located immediately adjacent to the highway because other drainage and infrastructure exists in that location. Construction would require clear cutting of most of the mature forest along the east side and would produce visible permanent scars where rock has to be blasted and/or trenched. Approximately 99 acres of forest would have to be removed.

Contrary to the O'Brien & Gere report which indicates a 35-40 foot wide workspace, the workspace along the PIP must be 75 feet wide. As described in the introduction, this width of workspace is required to safely and efficiently install the pipeline, in particular given the otherwise limited access of this area. Further, the use of short (20-foot) lengths of pipe for construction is not feasible for a number of reasons. First, 24-inch diameter pipe is not normally available in such short lengths. Second, short lengths would prevent proper bending of the pipe (required to fit the trench) since US DOT code does not allow bends to occur near the welds. Third, the shorter pipe joints would result in numerous additional field welds and thus significantly increase the overall construction duration and cost to install the pipeline. Regardless, O'Brien & Gere's assumption that the use of shorter joints would

somehow reduce the workspace requirements for this segment is also incorrect. The size of the workspace is dictated, among other things, by the weight of the pipe string once it is welded together and consequently, the size of the equipment needed to safely lift and place it in the trench.

The results from construction would be to expose hundreds of private residences (which are located immediately adjacent to the PIP ROW) to the visual and noise impacts associated with the parkway. Trees could not be replanted over the entire ROW, as operations and maintenance activities would require access to the pipeline. At each overpass, (approximately 12), the pipeline would have to be located off the PIP ROW for several hundred feet in order to avoid the overpass foundations. The confined spaces on adjacent roads and PIP over/underpasses would cause construction access to be extremely difficult and disruptive. Further, truck traffic must be allowed to access the PIP in order to transport the required heavy equipment and materials to the construction locations. Well over several hundred permitted loads would be required to complete pipeline construction along this segment of the PIP. Many loads would be in excess of the weight-bearing design of the existing highway facilities and the adjacent shoulders, leading to significant damages in areas that were just recently restored and/or enhanced. Although construction appears to be feasible along the PIP, the impacts would be severe and profound.

Route 1 then parallels Tennessee's ROW for approximately 1.3 miles through Tallman Mountain State Park. Approximately 10 acres of mature forest would be removed within this Park. The route then passes through the Palisades cliff. Contrary to the O'Brien & Gere report, Tennessee has taken all the usable space in the existing cut through the Palisades; thus, an estimated 3,700 cubic yards of rock would have to be permanently removed, leaving a highly visible and unsightly scar. This would take place on a 20 to 25 degree slope leading directly to the river and wetlands. The steep incline of the bank is likely to lead to continued erosion and stability problems as evidenced by the obvious erosion problems resulting from the Tennessee pipeline that was constructed approximately 40 years ago.

From the west shore of the Hudson River, the route through this area crosses the wetland located within the Piermont Marsh. This marsh is designated as a Significant Coastal Fish and Wildlife Habitat and is one of only 25 National Estuarine Research Reserve locations as reported by NOAA. Contrary to the NYSDOS brief and the O'Brien & Gere report, there is no space available for staging. Filling in the wetlands along the river to create a construction staging area is not a realistic solution. Therefore, at least one acre of presently undisturbed wetland would be destroyed by filling and trenching. Due to the lack of stability of the soils in the Piermont Marsh, it is likely that the trenching would create a swath approximately 150 feet wide, which would take years to be restored to a more natural condition.

There is no evidence of a permanent channel within the immediate construction area, contrary to the assertions of the NYSDOS. A permanent stream channel through the Piermont Marsh is located to the north but could not be used due to routing restrictions along the Palisades cliff. Since there is no staging area at any location at the base of the cliff, a staging area of approximately one acre must be created by filling the wetland at that location.

Similar to the west side, no workspace exists to stage the pipeline landing on the east side of the Hudson River. Just as Tennessee did about 40 years ago, approximately one acre of the

Hudson River would have to be filled to create the required staging area. However, filling in the Hudson River to create an artificial staging area is not a realistic option, and unlike Tennessee's location, water flow from Wickers Creek into the Hudson River would be restricted.

The route then traverses through the Wickers Creek drainage basin, a steep, narrow draw (2:1 forested slopes on each side) bordered on one side for about 1,000 feet by residences and on the other by an under-construction gymnasium for Mercy College. Tennessee's ROW uses all available space within the basin leaving no room for new construction.

The Tennessee ROW then passes through dense residential neighborhoods (The Landing and Legend Hollow), a country club (Ardsley Country Club), and local streets that are best characterized as narrow and winding. A large number of residential structures already encroach upon the Tennessee ROW. As a consequence, routing a pipeline adjacent to the Tennessee pipeline in this location would destroy a large number of residential structures. There is no workspace or ROW to place additional pipeline facilities on or along Tennessee's existing easement, nor is there an effective means to detour traffic and place the pipeline in local streets. Construction within local streets would disrupt local traffic and deny access to private residences for extended periods of time.

Route 2

Route 2 (approximately 21.1 miles) is similar to Route 1 in that it starts by following the PIP. However, after approximately 5.1 miles, it leaves the PIP and parallels State Route 304 for about 4.6 miles. The route then parallels Tennessee ROW and follows it to Tallman Mountain State Park. Heading east from there, Route 2 is the same as Route 1. Route 2 is also not feasible from a design, construction, operation and maintenance perspective for the same reasons as described in Route 1, above.

Approximately 40 acres of forest would have to be removed while paralleling the PIP along this route.

Paralleling Route 304 on the east side would be difficult as it is heavily trafficked, and bordered by businesses. It is not possible to construct the pipeline on the west side of Route 304 due to lack of workspace for the required directional drills.

A portion of this segment follows the Tennessee Pipeline ROW and runs easterly through Bergen County, New Jersey. The Tennessee Pipeline alignment passes through extremely densely populated areas. The pipeline shares a ROW with a high voltage Con Ed electric tower line, and no additional space is available for construction. In some cases it appears that there are permanent structures situated near -- if not on top of -- the existing pipeline. A 2000-foot crossing of Lake Tappan would be required. The lake is a reservoir that serves four New Jersey counties and would probably require a horizontal directional drill (HDD) rather than a lay barge method of construction. With the pipelines and electric lines occupying the available workspace in the ROW, additional ROW would be required at each shore.

Route 3

Route 3 (approximately 19.6 miles) follows the CSX railroad south for approximately 12.9 miles. It then parallels the PIP for approximately 2 miles before connecting with the Tennessee ROW and following the balance of Route 1. Other than the route along the railroad, the feasibility constraints and impacts are the same as Route 1 except only approximately 15.5 acres of clear cutting along the PIP would be required (due to the reduced length). Route 3 is further flawed by numerous locations along the CSX railroad which do not have any workspace or ROW available for use. Some sections have retaining walls that leave only room for trains. In other areas, the engineered rail foundation (bed) is sloped and takes up all available space in the ROW. In many places, there are residences and/or business structures immediately adjacent to the railroad ROW, leaving no pipeline workspace. Some locations are fill areas and have only 10 feet on each side of the rail before they slope up to 40 feet in height. Electric poles typically occupy one side of the ROW, and often drainage ditches along the tracks preclude any workspace for construction. In addition, the railroad passes beneath Rockland Lake State Park and Hook Mountain State Park via a tunnel. The pipeline cannot be placed in the tunnel because there is not enough room between the track and tunnel walls. Routing around the tunnel would involve permanent clearing and grading steep slopes in Hook Mountain State Park, a National Historic Landmark. These activities would leave a permanent scar visible from the Hudson River. Route 3 is not feasible from a design, construction, operation and maintenance perspective.

Installing the pipeline inside extended lengths of casing, as recommended by O'Brien & Gere, would result in a dangerous and unacceptable situation. The pipeline's cathodic protection system will be jeopardized (due to a shielding effect from approximately 12.9 miles of casing), and it is extremely likely that the pipeline will electrically short against the casing. This could lead to pipeline structural failure.

Route 4

Route 4 (approximately 24.8 miles) is the same as Route 1 except the initial 5.1 miles of parallel construction in the PIP is replaced with approximately 3.9 miles along the Algonquin ROW through Harriman State Park (National Register of Historic Places) and approximately 9.1 miles along the Thruway. Route 4 is also not feasible from a design, construction, operation and maintenance perspective for the same reasons as described in Route 1, above. In addition, approximately 30 acres of mature forest would be removed from Harriman State Park along with significant amounts of blasting and permanent grading. Further, the Thruway is characterized by steep slopes, rock faces, confined spaces, and is bordered by densely populated areas. An existing fiber optic cable route is located in the north side of the highway ROW and occupies most of the existing space, therefore making it necessary to use the south side of the ROW. It appears that blasting would be required in several locations which would result in traffic stoppage of up to several lanes of traffic for approximately 30 minutes each day. Trees and vegetation acting as screening barriers to the populated areas would be removed causing the residents along the Thruway additional noise impacts from this highly trafficked corridor. The portion of the alignment passing through Suffern lies in heavily trafficked, narrow streets. The Thruway is elevated through Suffern on bridges and

vertical retaining walls. A location to gain access to the Thruway from Suffern local streets on the proposed route does not exist.

Route 5

Route 5 (approximately 28.6 miles) is the same as Route 4 except the balance of the parallel lay in the PIP (approximately 7.5 miles) is replaced with approximately 4.6 miles parallel to State Route 304 and 6.5 miles parallel to the Tennessee ROW. Route 5 is not feasible from a design, construction, operation and maintenance perspective for the same reasons as described in Routes 2 and 4, above.

Route 6

Route 6 (approximately 16.8 miles) follows the CSX railroad south for approximately 7.8 miles. As described in Route 3 above, this section of CSX railroad has numerous feasibility constraints including inadequate workspace and a tunnel section under Hook Mountain. From there, the route crosses through a large, deep quarry (permitted to over 500 feet below the Hudson River) and then traverses cross-country to Nyack Beach State Park. Construction through the quarry is not possible and slight deviations around the quarry (in particular along Snake Hill Road) would unacceptably place the pipeline in several severe side slope areas.

Installing the pipeline inside extended lengths of casing, as recommended by O'Brien & Gere, would result in a dangerous and unacceptable situation. The pipeline's cathodic protection system will be jeopardized (due to a shielding effect from approximately 4.5 miles of casing) and it is extremely likely that the pipeline will electrically short against the casing. This could lead to pipeline structural failure.

The western shore of this route would be situated in dedicated parklands, Hook Mountain State Park and Nyack Beach State Park (both National Natural Landmarks). The only available workspaces are the parking lots serving both parks. The entrances to the parking lots are historic access roads that are hand-laid, vertical stone walls that would most certainly be damaged or destroyed by construction vehicles. The seawall along the Hudson River would most likely be severely damaged as well. The park would be closed for at least several months to complete the required pipeline construction activities in this area. The eastern shore traverses Rockwood Hall State Park and/or Phelps Memorial Hospital lands. The bore under the railroad on the east shore would be difficult with limited working space. Route 6 is not feasible from a design, construction, operation and maintenance perspective.

Route 7

Route 7 (approximately 6.8 miles) heads north from the FERC certificated route and follows the CSX railroad for approximately 3.8 miles to the Lovett Power Generation Plant. It crosses the Hudson River at Lovett, landing on the east side of the river just south of the LaFarge Gypsum plant. From there, it follows Con Ed's electric transmission ROW for approximately 3 miles until it rejoins the FERC certificated route. Route 7 has multiple feasibility constraints at numerous locations along the CSX railroad which do not have any workspace or ROW available for use. Some sections have retaining walls that leave only room for trains. In other areas, the engineered rail foundation (bed) is sloped and takes up all

available space in the ROW. In many places, there are residences and/or business structures immediately adjacent to the railroad ROW leaving no pipeline workspace. Some locations are fill areas and have only 10 feet on each side of rail before they slope up to 40 feet in height. Electric poles typically occupy one side of the ROW, and often drainage ditches along the tracks preclude any workspace for construction.

At one point along this route, the route passes through Stony Point Park (a National Historic Landmark), which is a state park maintained by the Palisades Interstate Park Commission. An historic bridge that crosses over the railroad tracks accesses the park and immediately to the west of the bridge is an historic stone archway. The railroad tracks pass through a narrow rock cut underneath this bridge and immediately adjacent to the stone archway. The rock cut in this area is very narrow and would have to be widened by at least 50 feet, which would destroy the character of this entranceway. Approximately 5,000 cubic yards of rock and the historic bridge would be permanently removed in this process.

Installing the pipeline inside extended lengths of casing, as recommended by O'Brien & Gere, would result in a dangerous and unacceptable situation. The pipeline's cathodic protection system will be jeopardized (due to a shielding effect from approximately 3.8 miles of casing) and it is extremely likely that the pipeline will electrically short against the casing. This could lead to pipeline structural failure.

The Hudson River crossing is likely not feasible from Lovett. However, a physical inspection of the site was not possible. Observation of the Lovett Plant from a nearby property did not reveal any adequate workspace. It is possible that marginally adequate staging might be available at the Tilcon quarry immediately south of Lovett. However, no route was available through the Tilcon property due to ongoing operations, steep sidling slopes, and a large hazardous material containment facility within the property. The approach on the eastern shore has adequate workspace.

The route from the eastern shore follows an electric transmission ROW. The crossing of NY State Route 9 in Buchanan is infeasible due to extensive rock walls close to the highway, which prevent adequate room to bore the highway. The crossings of State Route 9A and the railroad ROW leading to Montrose Station Road would be extremely difficult because of a small pond, the railroad and the highway, and a steep slope. Subsurface conditions, such as solid rock, may make boring and other construction activities very difficult in this area. Route 7 is not feasible from a design, construction, operation and maintenance perspective.

Route 8

Route 8 (approximately 7.4 miles) is the same as Route 7 except an Orange & Rockland electric transmission ROW is followed to Lovett instead of the CSX railroad. This segment is approximately 125 feet in width, 4.2 miles in length, and already contains 2 sets of electrical towers, and a high-pressure natural gas pipeline. Hundreds of residences line the ROW along both sides for significant portions of its length. There is inadequate room to construct the pipeline on or adjacent to the electrical facilities for most of this segment. The balance of the route from Lovett to its interconnection with the FERC certificated route suffers from the same feasibility constraints as described in Route 7, above. Route 8 is not feasible from a design, construction, operation and maintenance perspective.

Route 9

Route 9 (approximately 11.9 miles) follows the PIP for approximately 4.2 miles north from the FERC certificated route. The same types of impacts along the PIP described in Route 1 would occur for this section as well. However, only approximately 33 acres of mature forest would be clear cut. Similar to Route 1, construction appears to be feasible along this portion of the PIP. However, the impacts would also be severe and profound. Route 9 then follows an electric transmission ROW (owned by Orange & Rockland) and two parallel Algonquin pipelines for approximately 4.1 miles to the Hudson River. The existing utilities occupy all the available workspace along portions of the alignment that pass through several residential areas. The route then crosses the Hudson River under Orange & Rockland's facilities. The approach to the eastern shore has adequate workspace, and the transition from the river through the shoreline and to landfall is good. The western approach is difficult, but it can be done. Workspace is limited, and a narrow road and railroad must be crossed at the water's edge. A significant amount of grading would be required in this area. From the eastern shore of the Hudson River, the route follows Con Ed's electric transmission ROW to the FERC certificated route. As described in Route 7 above, the bore under State Route 9 in this segment of the route is not feasible. Route 9 is not feasible from a design, construction, operation and maintenance perspective.

Route 10

Route 10 (approximately 12.2 miles) is the same, and contains the same fatal flaws as Route 9, however it crosses the Hudson River adjacent to Algonquin's ROW. Algonquin's pipelines and other facilities occupy the entire existing ROW, and all available workspace. On the western shore, a bore across a road and railroad would be impossible, as it would require a 50-foot deep bore pit (not feasible). Further, there is no staging area for an HDD or way to pull back the pipe from the river as suggested by O'Brien & Gere. Route 10 is not feasible from a design, construction, operation and maintenance perspective.

Route 11

Route 11 (approximately 18.8 miles) is basically the same as Route 1 except it substitutes approximately 1.4 miles along the Thruway, 5.9 miles along the CSX railroad and 1.4 miles along Tennessee's ROW for approximately 7.5 miles along the PIP. Consequently, this route has multiple fatal flaws including the previously described impacts to the PIP and nearby residences, the infeasible construction locations along the CSX railroad, the infeasible route along Tennessee's ROW in New Jersey, the permanent impacts to Tallman Mountain State Park and the Palisades, the significant and permanent effects to Piermont Marsh, the infeasible river crossing location and section through Wickers Creek, and the impossible segment through several residential communities in Dobbs Ferry.

Installing the pipeline inside extended lengths of casing, as recommended by O'Brien & Gere, would result in a dangerous and unacceptable situation. The pipeline's cathodic protection system will be jeopardized (due to a shielding effect from approximately 6.7 miles of casing) and it is extremely likely that the pipeline will electrically short against the casing.

This could lead to pipeline structural failure. Route 11 is not feasible from a design, construction, operation and maintenance perspective.

Route 12

Route 12 (approximately 16.3 miles) parallels the PIP for approximately 5.1 miles south from the FERC certificated route. The impacts along this segment have been previously discussed in Route 1, above. The route then follows approximately 1.4 miles of the Thruway, follows along Snake Hill Road, and then traverses cross-country to Nyack Beach State Park. From there, the route crosses the Hudson River and follows Route 117 to the FERC Certificated route on the North County Trail. Construction along the Thruway would require blasting in several locations which would result in traffic stoppage of several lanes of traffic for approximately 30 minutes each day. No feasible route along Snake Hill Road is available due to several severe sidling areas. The western shore of this route would be situated in dedicated parklands, Hook Mountain State Park and Nyack Beach State Park (both National Natural Landmarks). The only available workspaces are the parking lots serving both parks. The entrances to the parking lots are historic access roads that have hand-lain, vertical stone walls that would most certainly be damaged or destroyed by construction vehicles. The seawall along the Hudson River would most likely be severely damaged as well. The park would be closed for at least several months to complete the required pipeline construction activities in this area. The eastern shore traverses Rockwood Hall State Park and/or Phelps Memorial Hospital lands. The bore under the railroad on east shore would be difficult with limited working space. Route 12 is not feasible from a design, construction, operation and maintenance perspective.

Route 13

Route 13 (approximately 12.6 miles) is the same as Route 10 except it follows Algonquin's ROW from Columbia's 24-inch Line 10338 pipeline in Harriman State Park to the PIP (approximately 5.0 miles) instead of following the PIP itself. This is the same route identified by FERC as the "Hudson River North Alternative 1" in its FEIS. Although the impacts and infeasibility of this route are well documented in FERC's FEIS (Volume 1, at 6-4, 6-5), following is a brief summary.

The first 3.7 miles of this route are within Harriman State Park, listed on the National Register of Historic Places. The route would be immediately adjacent to and significantly expand the existing Algonquin ROW. The existing Algonquin ROW is only about 75 feet wide and it currently contains from 2 to 3 pipelines, a cathodic protection line, and, in some locations, an AT&T line. This portion of Route 13 includes significant stretches of difficult sideling construction that would require extra work space, up to 80 feet wide in moderately steep areas and up to 110 feet in width for severe side slopes. Construction through this area would require clearing approximately 19 acres of mature forest, of which approximately 13.7 acres must be maintained as permanent ROW. Approximately 44 acres would be extensively graded, thus permanently impacting the existing topographic and rock features.

Continuing east to the PIP, this route would cross at least 4 different residential and/or recreational areas. Following the powerline ROW from south to north, they are:

- Palisades Court - Thirteen houses are immediately adjacent to the eastern side of the powerline ROW. The terrain is severely sideling along the western side of the ROW.
- Platel Brauhause – This recreational area has numerous outdoor activity areas such as tennis courts, ball fields and picnic grounds as well as outbuildings necessary for operations. These facilities are immediately adjacent to the existing ROWs.
- Calls Hollow Road crossing - Residences are immediately adjacent to the ROWs on the west side; the terrain is severely sideling on the east side.
- Calls Hollow Road trailer park – Mobile homes are immediately adjacent to both sides of the existing ROW; the powerlines cross this area overhead. Pipeline installation would require the removal of approximately 20 trailers.

O'Brien and Gere's suggestion to use "stove pipe" or HDD construction methods through these areas underscores the need for full field investigations of each portion of every route. As described above, many of the structures are immediately adjacent to the existing ROW leaving no location to place the pipeline. The method used to construct the pipeline is irrelevant. Further, undercutting and destabilizing slopes to create small benches to install the pipeline belies sound design principles, in particular since a significant number of these slopes already have residences at their summit. There are no minor reroutes either on existing corridors or otherwise that could be used to avoid these residential and recreational areas. From this point east to the Hudson River, Route 13 is the same as Route 10 and thus has all the same fatal flaws. Route 13 is not feasible from a design, construction, operation and maintenance perspective.

Route 14

Route 14 (approximately 11.6 miles) is the same as Route 10 except it follows a powerline ROW for approximately 1.1 miles, and then traverses cross-country on new ROW for approximately 3 miles to the PIP instead of following the PIP itself. This is the same route identified by FERC as the "Hudson River North Alternative 2" in its FEIS. Although the impacts and infeasibility of this route are well documented in FERC's FEIS (Volume 1, at 6-5), following is a brief summary.

Route 14 follows an existing electric transmission ROW through a portion of Palisades Interstate Park, a National Register property, to US 202. Between US 202 and the intersection with Route 10 at the Algonquin pipeline ROW, no existing corridors or other workspace are available. Although USGS topographic mapping indicates that ample space is available for a new pipeline ROW through this area, the base map dates to 1955 and does not depict the significant expansion of residential neighborhoods that has subsequently occurred in this area.

After crossing US 202, Route 14 leaves existing ROW and passes through a residential subdivision and crosses Minisceongo Creek before entering a municipal park that was once part of the Letchworth Village State Mental Hospital grounds. It then crosses Thiells-Mt. Ivy Road, an additional segment of municipal park, and Letchworth Village Road before crossing the grounds of the Letchworth Village Development Center. After crossing Willow Grove

Road, this route passes through another residential subdivision, another municipal park, and a third residential subdivision before intersecting Route 10. From that point east, Route 14 is identical to Route 10 and has the same previously described fatal flaws. Once again, the method used to construct the pipeline is irrelevant as the structures are immediately adjacent to the existing ROW leaving no location to place the pipeline. In addition, unlike the in-street construction proposed by Millennium in the City of Mount Vernon, roads near Route 14 are too winding to install the pipeline and too far apart to allow for reasonable detours. Route 14 is not feasible from a design, construction, operation and maintenance perspective.

Route 15

Route 15 (approximately 12.7 miles) would place the pipeline for an extended length (approximately 7.2 miles) within the federal navigation channel and then cross the river in the vicinity of Route 117. The route would then follow Route 117 to its intersection with the FERC certificated route on the North County Trail. Parallel construction for this length within the navigation channel would be an unacceptable proposition. The pipeline would have to be buried with extra cover (15 feet) for the entire length. This segment would actually significantly increase the length, time and construction related impacts to Haverstraw Bay. Construction could not be completed within the 2½ month designated window, and it is extremely doubtful that the US Army Corps of Engineers would permit joint occupation of the federal shipping channel for this extended length. It should be noted that this route would still have approximately 4000 feet outside of the federal channel within the Haverstraw Bay Significant Fish and Wildlife Habitat area. Route 15 is not feasible from a design, construction, operation and maintenance perspective.